REMARKS/ARGUMENTS

Claims 1, 4, 5, 9, 16, 22, 25-28, 30 and 35-44 are pending in the application. Claims 22, 26-28, and 30 are amended. No Claims are cancelled. Claims 39-44 are added. The amendments to the claims as indicated herein do not add any new matter to this application.

CLAIM REJECTIONS--35 U.S.C. § 101

Claims 22, 26-28 and 30 were rejected under 35 U.S.C. § 101 because the claims allegedly fail to place the invention squarely within one statutory class of invention. This rejection is respectfully traversed.

More specifically, the Office Action alleges that Claims 22, 26-28, and 30 do not fall within a statutory class of invention because they refer to a form of energy. The Office Action states under Response to Arguments, that "applicant has provided evidence that applicant intends the 'medium' to include e.g., punch cards, paper tape. The punch cards and paper tape are not hardware medium. As such, the claim is drawn to a form of energy. Energy is not one of the four categories of invention and therefore this claim(s) is/are not statutory." (Office Action, p. 2). It is not understood how punch cards and paper tape, by not being hardware medium, are then drawn to a form of energy. It does not logically follow that punch cards and paper tape are a form of energy as the Office Action states that energy is "not a physical article or object" but punch cards and paper tape are clearly physical objects.

In any case, and in order to further prosecution, Applicants have amended Claims 22, 26-28, and 30 to recite "The *volatile or non-volatile* computer readable storage medium." By reciting that the computer readable storage medium is volatile or non-volatile, transmission media that may take the form of acoustic or light waves is necessarily excluded. It is believed that the Office Action referred to transmission media when referring to a form of energy because referring to punch cards and paper tape as energy simply does not make sense. Thus, Applicants hereby respectfully request reconsideration of the rejection of Claims 22, 26-28, and 30 under 35 U.S.C. § 101.

CLAIM REJECTIONS—35 U.S.C. § 103

     Claims 1, 4-5, 16, 22, 25-28 and 35-37 were rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over U.S. Publication No. 2003/0191769 ("Crisan") in view of U.S. Publication No. 2003/0140308 ("Murthy") and U.S. Patent No. 6,047,291 ("Anderson"). This rejection is respectfully traversed.

     Claims 25, 30 and 38 were rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over U.S. Publication No. 2003/0191769 ("Crisan") in view of U.S. Publication No. 2003/0140308 ("Murthy") and U.S. Patent No. 6,047,291 ("Anderson") and further in view of the admitted prior art of the application. This rejection is respectfully traversed.

<center>Claim 1</center>

     Among other things, Claim 1 recites "in response to receiving the request to execute the statement, performing the steps of: executing the second function to obtain the data type descriptor that identifies one or more data types of result data that should be returned for the first function." The Office Action alleges that this limitation is taught or suggested by *Crisan* with the first function of Claim 1 as a UDF in *Crisan* and the second function of Claim 1 as the workflow function of *Crisan* (Office Action, p. 12). However, *Crisan* fails to teach or suggest the first function and the second function as claimed.

     In order to distinctly point out the differences between Claim 1 and *Crisan*, a general overview of each is provided. In Claim 1, when 1) a request is received to execute a statement, 2) a second function is executed to obtain the data type descriptor for the first function, and 3) the first function is executed to return the result data. This differs significantly from *Crisan*, where: 1) UDFs are generated with mapping information and workflow description sent to a function generator, the mapping information containing the data types returned by corresponding workflow functions 2) the UDF is called, and 3) the UDF invokes the workflow function in order to return data from the source.

     The Office Action makes the error that the workflow function is the second function that returns the data type that is specified for the data from the source. Instead, the data type information comes from mapping information when the UDF is generated by the function generator (*Crisan*, Fig. 12). The mapping information includes a mapping section and a flow section. (*Crisan*, Fig 13). The flow section (*Crisan*, Fig. 15) states what type of data is to be

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returned by a particular function in the workflow. It is apparent that the UDF thus obtains data type information *before any request to execute a UDF is received*, as a UDF may not even be called at this point (as the UDF is not yet even generated). Furthermore, the mapping information (and hence data type information) is provided to the UDF as the UDF is generated. This is contrary to Claim 1, where the data type descriptor is obtained dynamically, by the second function, *after the request to execute the statement is received.*

This error is compounded when the Office Action alleges that the second function of Claim 1 is the workflow function of *Crisan*. In *Crisan*, when a UDF is executed, the UDF does then call a workflow function in a remote workflow engine. However, the workflow function returns remote source data itself, and does not obtain a "data type descriptor that identifies one or more data types of result data that should be returned by the first function" as recited in Claim 1. It would not make sense for the workflow function to perform this step as the UDF already contains data type information when the UDF was generated by the function generator.

The sections cited by the Office Action confirm the sequence of events described in *Crisan*. The Office Action cites *Crisan*, paragraphs [0059]-[0060] and [0144]-[0145], with respect to the limitation. Paragraphs [0059]-[0060] discuss UDFs and how the UDF is used to invoke a workflow function on a remote workflow engine. Paragraphs [0144]-[0145], however, discuss the function generator which helps generate the UDFs initially. The function generator generates the UDFs before any UDF may be called. As stated in Paragraph [0146] "The described implementations provide a technique by which a database administrator can generate a UDF source file 248 whose executable form 208a, 208b . . . 208n is callable from a database program, such as SQL program 202, by providing a mapping information 246 and a workflow description file 244."

What is disclosed in *Crisan* is actually more reminiscent of what is described as the prior art in the Specification and not in Claim 1. The Prior Art is illustrated in Figs. 1 and 2 of the Application and presents the scenario where data type information is available and functions are compiled with that information prior to any request to execute the function. Claim 1 is clearly different in that the limitations recite "in response to receiving the request to execute the statement, executing the second function to obtain the data type descriptor that identifies one or more data types of result data that should be returned for the first function." The second function is executed to determine the data type descriptor and *then,* the first function is compiled and then

executed to return the result data. A review of *Murthy* and *Anderson* also show that these references do not teach or disclose the limitations as claimed. As at least one element is not taught or suggested by the cited references, Claim 1 is patentable over the cited art and is in condition for allowance.

<div align="center">CLAIMS 16 and 22</div>

Claim 16 contains limitations similar to Claim 1 except Claim 16 is recited in computer system format. Therefore, Claim 16 is patentable for at least the reasons given above with respect to Claim 1.

Claims 22 contains limitations similar to Claims 1 except Claim 22 is recited in computer-readable storage medium format. Therefore, Claim 22 is also patentable for at least the reasons given above with respect to Claim 1.

<div align="center">Claims 39-44</div>

Claims 39 and 40 recite limitations that refer to registered data types being temporary in nature. Claim 39 recites "wherein the one or more registered data types are temporary and are deleted (a) when execution of the statement is complete or (b) when a compilation of the statement is deleted, overwritten, or otherwise removed from memory" and Claim 40 recites "wherein the one or more registered data types includes a flag to indicate that the one or more registered data types are temporary; executing a process periodically to identify temporary data types; and deleting the temporary data types identified for which (a) execution of all statements referencing the one or more data types is complete or (b) where compilations of all statements referencing the one or more data types have been removed from memory."

For the reference made to registered data types in Claim 1, the Office Action has alleged that *Crisan* teaches or discloses the limitation under paragraph [0129]. However, paragraph [0129] of *Crisan* discloses an SQL statement being stored in nonvolatile memory as part of the steps for creating a UDF from a Web Services Description Language. However, no reference is made to something comparable to the registered data types, much less registered data types that are temporary and are deleted under particular conditions. A review of *Murthy* and *Anderson* also show that these references do not teach or disclose the limitations as claimed. As such, at least one element of Claims 39 and 40 are not taught or suggested by the cited references, and Claims 39 and 40 should be allowed.

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Claims 41-42 contain limitations similar to Claims 39-40 except Claims 41-42 are recited in computer-readable storage medium format. Therefore, Claims 41-42 are also patentable for at least the reasons given above with respect to Claims 39-40.

Claims 43-44 contain limitations similar to Claims 39-40 except Claims 43-44 are recited in computer system format. Therefore, Claims 43-44 are also patentable for at least the reasons given above with respect to Claims 39-40.

DEPENDENT CLAIMS

Claims 4, 5, 9, 25-28, 30, and 35-38 directly depend upon independent Claims 1, 16, and 22. Therefore, these dependent claims also include the limitations of the independent claim upon with they depend. Thus, dependent Claims 4, 5, 9, 25-28, 30, and 35-38 are patentable for at least those reasons given above with respect to Claims 1, 16, and 22. In addition, each of Claims 4, 5, 9, 25-28, 30, and 35-38 introduce one or more additional limitations that independently render it patentable. However, due to the fundamental differences already identified, to expedite the positive resolution of this case a separate discussion of those limitations is not included at this time, although the Applicants reserve the right to further point out the differences between the cited art and the novel features recited in the dependent claims.

CONCLUSION

For the reasons set forth above, it is respectfully submitted that all of the pending claims are now in condition for allowance. Therefore, the issuance of a formal Notice of Allowance is believed next in order, and that action is most earnestly solicited.

The Examiner is respectfully requested to contact the undersigned by telephone if it is believed that such contact would further the examination of the present application.

Please charge any shortages or credit any overages to Deposit Account No. 50-1302.

Respectfully submitted,
Hickman Palermo Truong & Becker LLP

Dated: ___8/10/09_____   __/RobertSChee#58554/_____
                                            Robert S. Chee, Reg. No. 58,554

2055 Gateway Place, Suite 550
San Jose, California 95110-1083
Telephone No.: (408) 414-1213
Facsimile No.: (408) 414-1076

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